PERSPECTIVE   **OPEN ACCESS**

Analysing the Socio-Economic Conditions of Waste Pickers in Uttar Pradesh

Alka Gagan,[†] Subhash Anand, [ǀ*] Usha Rani,[í] Ashwani Kumar[î] and Anupama Dubey[¥]

Abstract

Waste pickers pick up reusable and recyclable waste from roadsides, dustbins, and landfills and sell it to local scrap dealers to earn money to fulfil their daily needs. Waste pickers do this in very unhygienic and hazardous conditions. This study examines the socio-economic status of waste pickers working in Ghaziabad using the Kuppuswamy SES (2020) scale. For this, 200 waste pickers, including male and female respondents, participated in this study. IBM SPSS software was used to code and analyse the data. Correlation matrix and regression were used for analysis. The research found that although waste pickers are crucial to society, their socio-economic situation is among the lowest. 51% of waste pickers are from the lower middle class, and 42% are from the upper lower class. These waste pickers of our study are underprivileged, illiterate, and live in poor conditions. For a sustainable and decent living, they need the government to satisfy some of their needs, including free medical services, access to clean, fresh water, social safety, and training for alternative employment.

Keywords: Waste Pickers/Rag Pickers; Socio-Economic Status; Poor Conditions; Correlation Matrix; Regression; Sustainable Development (SDG); SDG-11; Ghaziabad; Uttar Pradesh; India

---

[†] Research Scholar, Department of Geography, Delhi School of Economics, University of Delhi, New Delhi, India

[ǀ] Professor, Department of Geography, Delhi School of Economics, University of Delhi, New Delhi, India

[í] Assistant Professor, Department of Geography, Shivaji College, University of Delhi, New Delhi, India

[î] Assistant Professor, Department of Geography, C.H.L Government College, Chhara, Haryana, India

[¥]Assistant Professor, Institute of Public Enterprise (IPE), Hyderabad-500007 Telangana, India

[*]Corresponding Author Email: sanandpvs@gmail.com

Introduction

Waste picking entails the process of sorting, collecting, and selling various waste materials that can be found at dumpsites, riverbanks, street corners, or in residential areas and primarily consists of plastics, and bottles, cardboard, tin, aluminium, iron, brass, and copper (Wachukwu et al., 2010). Plastics, tins and aluminium products are heavily sought after, whereas paper goods rank low on the list. Waste pickers have recently become a part of the growing urban poor population (Kumari and Kiran, 2021). But waste picking is an inferior economic activity in the urban informal sector, largely undertaken by children aged 6–15 years from the weaker sections of society to survive and supplement their family income (Dwivedi, 2020; Kumar and Anand, 2017).

Socio-economic status reflects people's social status and living conditions (Gaur, 2013). A good socio-economic condition provides well-being and a healthy environment (Adler and Ostrove, 1999). So, in the context of this study, we argue that family size and structure seem to have a direct influence. As stated above, most children from poor families are involved in waste picking because they have to fulfil the needs of a large family (Krishna and Chaurasia, 2016). The children engaged in such waste picking lack other skills and have low literacy rates, with most of them being illiterate (Pandey et al., 2023). Nevertheless, continuous exposure to common garbage and hazardous hospital waste has led to various diseases (Bhosale and Korishetti, 2013) among the waste pickers.

It is to be noted that India, Bangladesh, Bhutan, Pakistan, Nepal, Sri Lanka, Afghanistan, and the Maldives are all part of South Asia and waste-picking activities by children and adults are common in these countries. Nevertheless, as evidenced by various South Asian studies, waste pickers face a high risk of occupational morbidities, including accidents, respiratory illnesses, eye infections, stomach issues, typhoid, diarrhoea, and musculoskeletal diseases (Rani et al., 2023). High heat exposure at work harms occupational health and those who work in moderate to intense hot surroundings are particularly vulnerable in South Asian countries (Kjellstrom et al., 2017). Waste picker children come into contact with broken glasses, needles, sharp metals, and waste pieces. They pick waste with their hands and feet exposed. These children are prone to skin, digestive, and respiratory issues (Batool et al., 2015)

In India, waste pickers are also known as rag pickers. However, at the First World Conference of Waste Pickers in 2008 Bogotá, Colombia, from 01 to 04 March, the term 'waste picker' was chosen for international communication, and 01 March is recognised as the International Waste Pickers' Day (International Alliance of Waste Pickers, n d, a, b; Samson, 2008). It should be noted that waste pickers are not the same as waste collectors. While the waste pickers collect materials to recycle, the waste collectors dispose of the collection either in incinerators or landfills with little or no recycling aim.

There are approximately 1.5 to 4 million waste pickers in India. Delhi has over 500,000 waste pickers (Noda, 2022). There are 10,000–12,000 waste pickers in Ghaziabad (Dev, 2020). As per government records, there is no authentic data available on waste pickers in Uttar Pradesh and other states. The waste pickers gather waste from roadside, trash cans and landfills, and sell them to scrap dealer. This helps lessen the pressure on the environment, pushes for recycling, promotes resource conservation, lowers the cost of garbage transportation, fosters waste segregation and lessens the amount of waste piling up at the dump (Ramitha, 2023). Like all other workers in the informal sectors, the COVID-19 pandemic also hit hard on the waste pickers (Hartmann et al., 2022). The informal workers involved in waste management during COVID-19 offer a vital service for preventing the formation of garbage piles that could pose health problems and accelerate the spread of COVID-19 (Sarkodie and Owusu, 2020). The pandemic indeed brought with it a variety of factors that hindered the structural factors, including poverty, a lack of sanitary facilities, the

risk of infection, injury, or slowed child development, a lack of support associations, and stigma as a social aspect that increased the disease's burden. Sadly, waste pickers during COVID-19 were also part of the India's migrant crisis (Gautam and Bhadra, 2023). Indeed, India's migrant crisis became viral worldwide "when neighbouring countries such as Bangladesh and Nepal faced similar quandary" (Bhattacharyya et al., 2023, p. 108) and importantly, the COVID-19 pandemic pushed 1.6 billion informal economy workers across the globe into the clutches of poverty (United Nations, n.d; also, Bhattacharyya et al., 2023). Taking these observations into context, this study aims to critically analyse the socio-economic conditions of waste pickers in Ghaziabad, a city located in the state of Uttar Pradesh, India.

Background of Waste Picking in the Study Area

Because of the rapid growth in utilisation of resources, the amount of waste is increasing rapidly, so, it become essential to manage waste materials in an effective manner to avoid adverse effects on the environment and public health. Waste pickers, in most cases, sort the waste from primary collection stations to dumpsites (Anand, 2005). The work that waste picker communities are performing is essential to minimising the quantity of reusable and recyclable materials that are often dumped in landfills. Waste pickers are essential to the waste management system and environmental preservation, yet their contributions are typically neglected (Rani et al., 2019). They gather the garbage and divide it further. As discussed above, the variety of pathogens it contains creates a serious risk to their health. But they have to bear a variety of aches and wounds to support themselves. Waste pickers gather waste from open dumping locations, such as glass, paper, plastics, wood, metals, etc., and then bring it to recyclable units (Anand, 2010).

Ghaziabad, the study area currently generates approximately 1,200 metric tons of daily solid waste and, according to official estimates, has the facilities to dispose of approximately 400 metric tons of daily solid waste (Khandelwal , 2021). Waste picking is a dominant factor in cities such as Ghaziabad because of the excess waste generation in metro cities (Bhosale and Korishetti, 2013). For this study, a socio-economic status scale was used to describe the overall status of waste pickers' social and economic conditions in Ghaziabad. Socio-economic status (SES) is a measure of a family's economic and social position in relation to others, based on various variables responsible for social and economic development (Singh et al., 2012). is to critically analyse the socio-economic conditions of waste rag pickers in Ghaziabad city using the Kuppuswamy SES scale. The initial section includes the introduction, outlining the study's context and objectives. The subsequent section discusses the research methodology, sample size, data collection strategies, and the statistical methods which have been used. Then it goes on to explain the findings derived from the data acquired through field surveys. Finally, the concluding section summarises the study's outcomes and implications.

Research Methodology

This study is based on a field survey of 200 respondents from Ghaziabad, which proved to be highly beneficial in collecting factual data and reliable information about the social and economic status of waste pickers. The Ghaziabad district is located in the middle of Ganga-Yamuna doab. In shape, it is roughly rectangular. Its length is 72 kilometres, and its breadth is 37 kilometres. It is located between 28°30' and 28°59' North latitude and 77°26' and 78°10' East longitude (District Census Handbook, 2011) (Figure 1). The city's municipality has been divided into five zones, each with 80 administrative wards: Kabir Nagar, City Zone, Vasundra, Vijay Nagar, and Mohan Nagar. There are 24 wards in the city zone: 17 in Kabir Nagar, 11 in Vasundra, 14 in Mohan Nagar, and 14 in Vijay Nagar (District Census Handbook, 2011).

There were 100 respondents from the Indrapuram landfill and surrounding area, and another 100 were from the Pratap Vihar landfill and surrounding area based on the convenience sampling method. Convenience sampling is a qualitative research sampling strategy that

involves selecting participants based on their accessibility and availability to the researcher. Respondents were above the age of 18 years. Data were collected using a structured questionnaire, observation, and semi-structured interview. Furthermore, some statistical techniques, such as correlation, regression, and SES (Socio-economic Status) were used. The square of the correlation coefficient (r), called the coefficient of determination, measures the degree of association between the two variables. A modified Kuppuswamy's Socio-economic Status (SES) (Kuppuswamy's Revised 2022) scale was used to assess the socio-economic status of the waste pickers (Kumar et al., 2022).
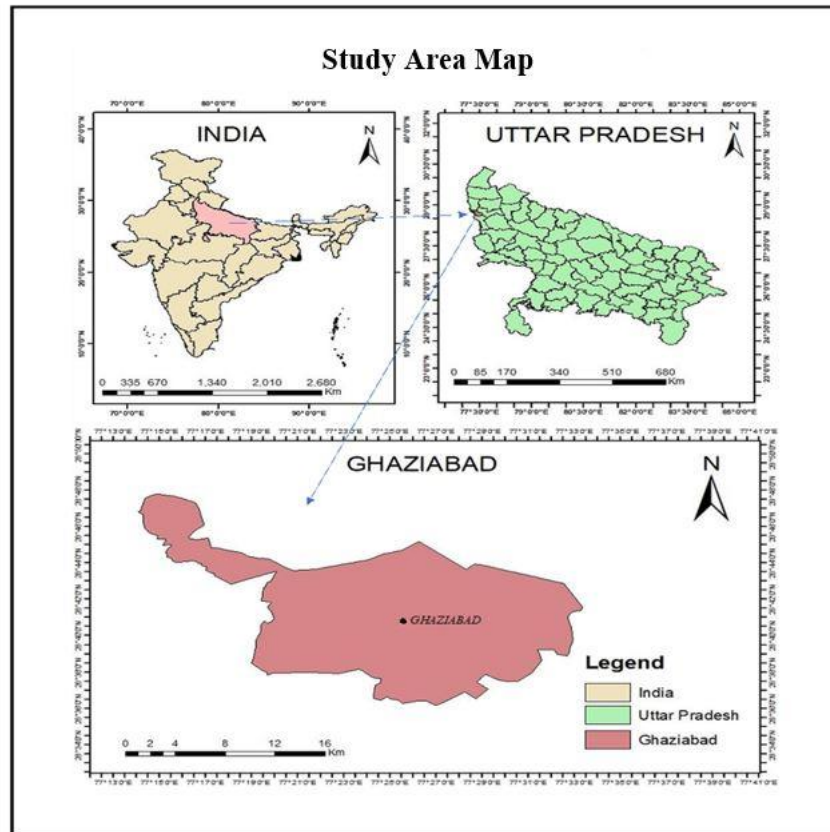
Figure 1: Location Map of the Study Area
Source: Prepared by the Authors based on the Census of India, 2011

Correlation Co-efficient

Correlation refers to the degree of relationship between two variables. The value of the co-efficient of correlation always ranges between 1 and -1.

Below is a formula for calculating the Pearson correlation co-efficient (*r*):

$$r = \frac{n \sum xy - (\sum x)(\sum y)}{\sqrt{[n \sum x^2 - (\sum x)^2][n \sum y^2 - (\sum y)^2]}}$$

Correlation Matrix

A correlation matrix is a statistical method for assessing the relationship between two variables in a data set. It is a table where each cell has a correlation coefficient, with 1 denoting a strong association, 0 a neutral relationship, and -1 a weak relationship between the variables.

Regression Analysis

To find regression, we used a simple regression equation of the type:

$$Y = a + bX,$$

Where, 'a' is the intercept (constant), 'b' is the slope (regression coefficient) of the regression line, 'X' is the independent variable and 'Y' is the dependent variable. This is the extended equation of the regression:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3,$$

Where 'a' is the intercept (constant) and b_1, b_2 and b_3 are the three slopes (regression coefficients). In an extended model, there are three independent variables of X_1, X_2 and X_3. In the case of multiple regression analysis, we not only estimated the F-value, t- value and R square but also checked the statistical significance.

Kuppuswamy SES (Socio-economic Status) Scale

The scale was initially developed by Kuppuswamy in 1976. It included index parameters such as education, occupation, and total income, which were further modified in later years to include the head of the family's educational status, occupational status, and overall aggregate income of the whole family, pooled from all sources. The most commonly used scales for measuring socio-economic status are the modified BG Prasad scale, Kuppuswamy scale, and Uday Pareek scale, which are used for both urban and rural areas.
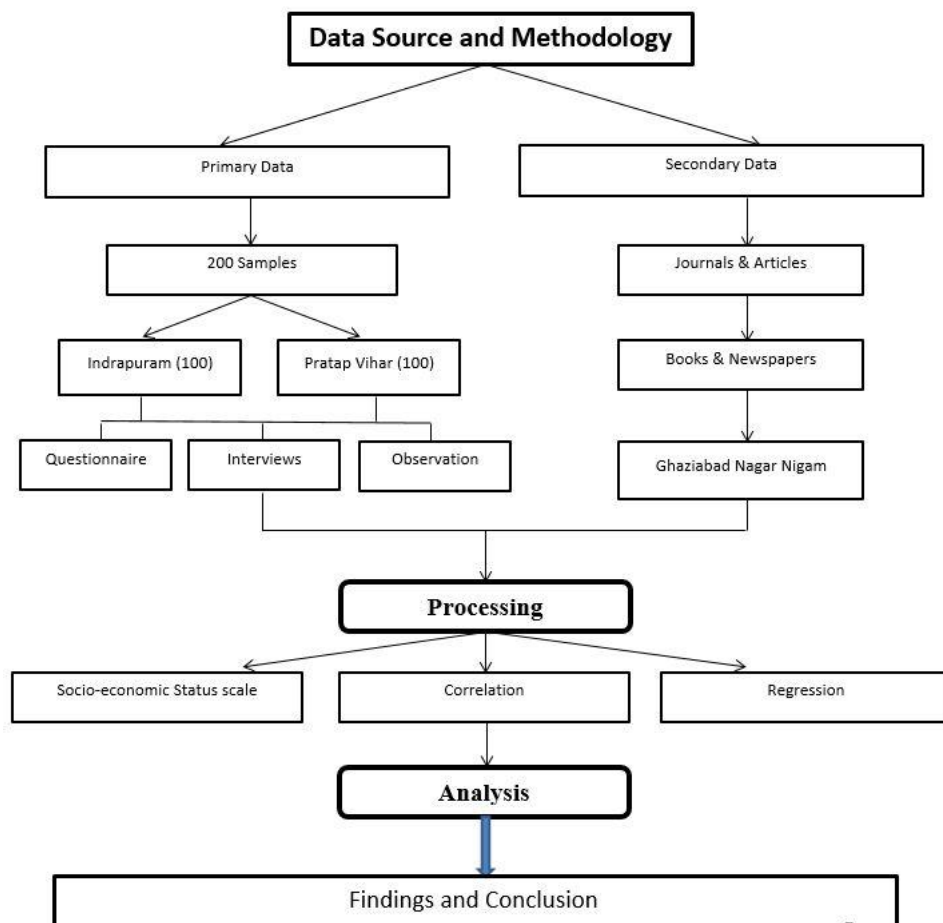
Figure 2: Methodology Flow Chart
Source: Prepared by the Authors, 2023

Results and Discussion

Socio-Economic Status of Waste Pickers

The data analysis revealed that with 116 male respondents, they had the maximum share in waste picking activity in the study area (Table 1). Only 84 female respondents were involved in waste picking out of 200 respondents. One has to acknowledge that the caste system is a unique system of Hindu social hierarchies. In this study, 157 respondents belonged to Other Backward Classes (OBC), followed by 22 respondents, who belonged to Scheduled Castes (SC) and 14 belonged to General category. In our study, we failed to find respondents belonging to Scheduled Tribes (ST). This study found that 74 per cent of rag pickers were from the Muslim religion, followed by 24 per cent Hindus and 2 per cent Christian (Table 1). More than three-fourths of the population lived in their own house, while the other one-fourth lived in rented houses and huts, and their living conditions were very poor (Table 1). In the distribution of 200 samples of waste pickers, only 26 per cent of respondents attended primary school, while 14 per cent of respondents attained secondary level education (Table 1). Importantly, despite long-term attempts by various levels of government and communities to further improve various basic services, Ghaziabad's water supply and sanitation remain poor. However, almost 40 per cent of respondents among the waste pickers have access to drinking water, which unravels a moderate facility level. But the findings reveal that the majority of the respondents—61 per cent practises open defecation signaling non-availability of toilets (Table 1). Only 24 per cent of respondents used temporary toilets.

One of the main components of any social group is its economy. The level of literacy, savings rates, social overhead capital, and per capita income all contribute to the measurement of economic backwardness. The daily income of waste pickers shows that 114 respondents' daily income ranges from INR 300 to INR 500, while the daily income of 56 respondents ranges between INR 501–INR 1000. During fieldwork, it was found that out of 200 respondents, almost half of the respondents had more than five members in the family engaged in waste picking activities (Table 1). Our research findings further revealed that 50 respondents had three members in the family engaged in waste picking, indicating moderate participation who were engaged in earning through rag picking activity, which shows moderate participation in earning (Table 1). 24 respondents had two members who were engaged in the waste picking activities. The respondents who saved more than INR 10000 are fewer. 130 respondents save only INR 501 to INR1000, and 32 respondents save INR 1001 to INR 2000 (Table 1).

Food is the most important aspect of waste pickers' spending. Unsurprisingly, our research findings revealed that most of the waste pickers spend majority of their income on alcohol, which is indeed a major concern in the study area. Despite working very hard all day, waste pickers earn meagre, and therefore, these waste pickers suffer from severe multidimensional forms of poverty (Aguilar and Sumner, 2020).

Correlation Between the Social Indicators

Table 2 shows correlation between social indicators among waste pickers. Education as an indicator is dominant among waste pickers because it indicates a very low positive correlation (0.075). Housing also has a very low positive correlation value (0.018) because of the high relevance of poor quality houses in social order among waste pickers. Religion has a negative correlation with social order. This shows that religion does not affect the social status of the waste pickers considered for this study. Sanitation and social order had a very low positive correlation (0.032) because of the lack of sanitation facilities among the respondents (Table 2). Social indicators and drinking water sources also have a very low positive correlation matrix (0.014).

Table: 1 Socio-Economic Status of Waste Pickers					
Social Status of Waste Pickers			**Economic Status of Waste Pickers**		
Religion	**No.**	**Per cent**	**Status of income (Per Day)**	**No.**	**Per cent**
Hindu	48	24	**Below INR 300**	30	15
Christian	3	2	**INR 301-500**	114	57
Muslim	149	74	**INR. 501-1000**	56	28
Total	200	100	**Total**	200	100
Gender			**Earning Family Members**		
Male	116	58	**One**	6	3
Female	84	42	**Two**	24	12
Total	200	100	**Three**	50	25
Status of Resident			**Four**	22	11
Own house	172	86	**Five or More**	98	49
Rented House	28	14	**Total**	200	100
Total	200	100	**Status of Savings (Monthly)**		
Education level			**INR 500-1000**	130	65
Illiterate	102	51	**INR 1001-2000**	32	16
Primary	52	26	**INR 2001-5000**	26	13
Secondary	28	14	**INR 5001-10000**	10	5
Senior Secondary	12	6	**More than INR 10000**	2	1
Graduation	6	3	**Total**	200	100
Total	200	100	**Income Expenditure on Various Activities**		
Basic Amenities Available (Out of 200)			**Food**	132	66
Drinking water	79	40	**Clothes**	18	9
Own pipeline	18	9	**Medicine**	16	8
Common pipeline/well	96	48	**Education**	12	6
Availability of electricity	19	9	**Others**	22	11
Bathroom facility	17	9	**Total**	200	100
Status of Sanitation					
Sanitary (water-sealed)	12	6			
Pit latrine	18	9			
Unsanitary (Temporary)	48	24			
Non/open field	122	61			
Total	200	100			
Source: Primary Survey, 2023					

Regression Analysis of Economic Indicators

A strong positive correlation exists between savings and income. This means that a higher income has the potential for higher savings. However, regression analysis has shown that waste pickers' savings completely depend on their income level. This suggests that although the respondents of our study have failed to save because of their low level of income. Waste picking is indeed insufficient to raise a household's monthly average income. Table 3 indicates that income and savings have no dependency, with a significance level of 0.006. The estimated results show that the variable's explanatory power decreases as R^2 is now only 0.037 (Table 3).

Table: 2 Correlation Between Social Indicators						
	Social	Education	Housing	Religion	Basic Amenities	Source of water
Social	1					
Education	0.075	1				
Housing	0.018	0.121	1			
Religion	−0.04	−0.106	−0.24	1		
Basic Amenities	0.032	0.218	0.119	−0.215	1	
Source of water	0.014	0.037	0.218	−0.135	0.74	1
Source: Calculation based on Primary Survey, 2023						

The co-efficient of the independent variable is low and statistically insignificant. In this equation, the F-value and the t-value are also statistically insignificant. Hence, the equation is unacceptable, and we may say that monthly average income and expenditure do not have any dependency.

Table: 3 Regression Analysis between Income & Saving and Income & Expenditure					
Regressor/Explanatory Variable	R^2	Estimated F-Value	t-value of Parameter	t-value of Regression Coefficient	Level of Significance
Income and Saving	0.006	0.12	2.13	0.22	0.615
Income and Expenditure	0.037	0.81	4.71	0.851	0.345
Source: Calculation based on Primary Survey, 2023					

Kuppuswamy Method of SES (Socio-Economic Status)

As stated above, this study deployed a modified Kuppuswamy's socio-economic status scale to assess the socio-economic status of the waste pickers. The Kuppuswamy SES has three parameters—education, occupation and income. Each of these three parameters are further classified into subgroups, and scores are assigned to each subgroup. The total score of the Kuppuswamy SES ranges from 3 to 29, classifying families into five groups. This scale classifies the study populations into high, middle, and low SES groups (Gaur, 2013).

Methods of Scoring

Scoring of Education

The head of the family is given the score for education, irrespective of whether he/she is the subject or not. Credit is given only for the completed degree that is the highest level earned and not the one currently pursued or not yet completed. The minimum score value was 1, and the maximum value obtained was 6.

Scoring of Occupation

The scoring is assigned to the occupation of the head of the family. If the head of the family has retired, a score may be given for his/her last job. When an individual is scored, we have to move up the categories from unemployed to professional. The maximum respondents get a score of 2 because they perform waste picking. But a few waste pickers of our study worked as labourers and waiters, or they worked in a small shops, and so, they got a score value accordingly.

Scoring of Income

The Kuppuswamy Socio-economic Status (SES) income scale gets updated according to the changes in the Consumer Price Index (CPI) for industrial workers, as projected by the Central Ministry of Statistics and Program Implementation on their website. The Consumer Price Index serves as a measure to track the

changes in the prices of goods and services that an average wage worker commonly buys, expressed as a percentage of the prices of the same goods and services in a base period or year.

It is also known as the cost-of-living index. The study area had respondents who scored 1, 2, and 3 based on their incomes.

Table 4: SES Score Values of Rag Pickers			
Education of the Head	**Score (Given by Kuppuswamy)**	**Score Value Based on Primary Survey**	**No. of Respondents**
Professional Degree	7		
Graduate	6	6	6
Intermediate or Diploma	5	5	15
High School Certificate	4	4	20
Middle School Certificate	3	3	26
Primary School Certificate	2	2	31
Illiterate	1	1	102
Occupation of the Head			
Professional	10		
Semi-Profession	6		
Clerical / Shop / Farm	5	5	8
Skilled worker	4	4	10
Semi-skilled	3	3	18
Unskilled	2	2	142
Unemployed	1	4	22
Family Income in Rupees (Monthly)			
≥185,895	12		
92951-185894	10		
69535-92950	6		
46475-69534	5		
27883-46474	3	3	56
9308-27882	2	2	113
≤9226	1	1	31
Source: Kumar et al., 2022			

After filling in the information and scoring the individual, the total score is summed, and the result is interpreted in terms of the class (Table 5).

(**A+B+C**) : **CLASS**

Here,

A is the score given to the respondent on the basis of education.

B is the score of respondent's occupation

C is the score given to the respondent on the basis of family income.

After giving scores to an individual, authors added them on the basis of education, occupation and income, and further it obtained a certain value. The authors looked at the Kuppuswamy, socio economic class to find the class of respondents.
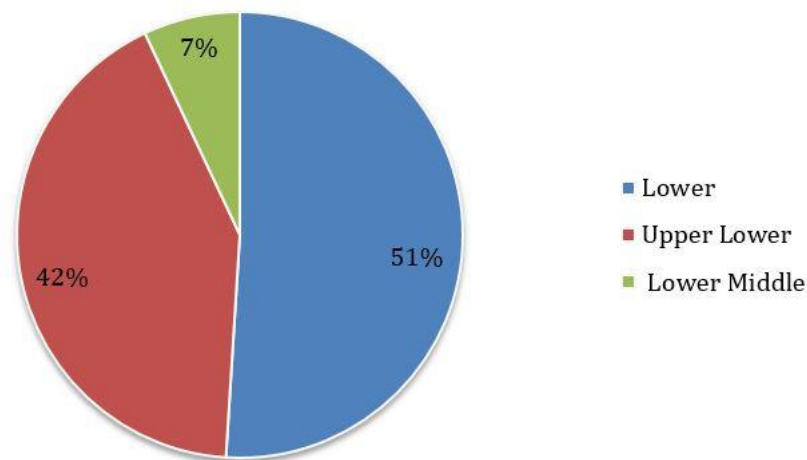
Thus, most waste pickers in the study area belong to the lowest class. 51 per cent of waste pickers belong to the lower middle class, and 42

per cent belong to the upper lower class (Figure 3).

Table: 5 Overall Socio-Economic Status (SES) Scale Values of Waste Pickers			
S.No.	Score	Socio-economic Class	Total Waste Pickers
1.	26-29	Upper (I)	
2.	16-25	Upper Middle (II)	
3.	11-15	Lower Middle (III)	14
4.	5-10	Upper Lower (IV)	84
5.	<5	Lower (V)	102
	Total		200
Source: Primary Survey, 2023			

Figure 3: Overall Socio-Economic Status (SES) Scale Values of Waste Pickers in the Study Area
Source: Primary Survey, 2023

Conclusion

The central purpose of this study was to assess waste pickers' socio-economic conditions in Ghaziabad, Uttar Pradesh. Our findings concluded that waste pickers live in extreme forms of multidimensional poverty and that the government should take steps to improve their condition.

We argue that the waste pickers play a crucial role in contributing towards a sustainable environment in their attempt to keep the society and surrounding environment clean and recycle waste materials. They travel long distances in search of rags/wastes and collect them. They have no leaves, which means they work 365 days a year. However, they fall victim to stigma (Gautam and Bhadra, 2023). The dwellers of our study area perhaps fail to understand that if the

waste pickers fail to work for a single day, the study area will become a garbage centre. Nevertheless, our study findings revealed that despite their weak social and economic status, they responsibly perform their work. It is arguable that the city's prosperity depends on the integration of formal and informal markets. Waste picking is categorised as an informal job adopted by the poor urban population. Instead of accepting waste picking and waste pickers as a nuisance in the city environment, we need to accept them as a part of society and integrate them with the city's integrity to transform the city of Ghaziabad into a sustainable city and perhaps accomplish SDG11.

References

Adler, N. E., & Ostrove, J. M. (1999). Socio-Economic Status and Health: What We Know

and   What We Don't. *Annals of the New York Academy of Sciences*, *896*(1), 3-15. https://doi.org/10.1111/j.1749-6632.1999.tb08101.x

Aguilar, Gisela Robles & Sumner, Andy (2020). Who are the World's Poor? A New Profile of Global Multidimensional Poverty. *World Development*. 126 https://doi.org/10.1016/j.worlddev.2019.104716

Anand, S. (2005). Solid Waste Generation and Management in Delhi: A Sustainable Approach. *Environment and Development,* IK International Publisher. 621-639.

Anand, Subhash. (2010). *Solid Waste Management*. Mittal Publications, New Delhi.

Batool, Z., Akram, M., Anjum, F., Faiz, S., & Ibrahim, M. (2015). Occupational Hazards and Health Status of Trash Picker Children in Faisalabad City, Punjab, Pakistan. *Mediterranean Journal of Social Sciences*, *6*(5), 590–595. https://doi.org/10.5901/mjss.2015.v6n5s2p590

Bhattacharyya, R., Sarma, P.K. & Das, T.K. (2023). Mass exodus of India's internal Migrant Labourers During the First Phase of COVID-19: A Critical Analysis. *SN Social Sciences*. 3, 108. https://doi.org/10.1007/s43545-023-00691-x

Bhosale, G. S., & Korishetti, B. V. (2013). Problems of Child Ragpickers. *International Research Journal of Social Sciences*, *2*(2), 6–11. https://isca.in/IJSS/Archive/v2/i2/2.ISCA-IRJSS-2012-03.pdf#:~:text=Rag%20pickers%20are%20subjected%20to%20chemical%20poisons%20and,materials%20and%20addicted%20to%20chewing%20and%20smoking%20tobacco.

Census of India (2011). *Directorate of Census of India*. Government of India, New Delhi, India.

Dev, A. (2020, September 3). Ghaziabad: Uniforms, Id Cards for Rag pickers. *The Times Of India*. https://timesofindia.indiatimes.com/city/ghaziabad/uniforms-id-cards-for-ragpickers/articleshow/77900120.cms

District Census Handbook, (2011). *Village and Town Directory*, Directorate of Census Operations, Uttar Pradesh.

Dwivedi, V. (2020). A Study of Socio-economic and Health Conditions of Children Working as Rag-pickers in Udaipur, Rajasthan. *International Journal of Advanced Research*, *8*(5), 1335–1342. https://doi.org/10.21474/ijar01/11052

Gaur, K. L. (2013). Socio-Economic Status Measurement Scale: Thirst Area With Changing Concept for Socio-Economic Status. *International Journal of Innovative Research and Development*, *2*(9), 139-145. https://internationaljournalcorner.com/index.php/ijird_ojs/article/view/133898

Gautam, A., & Bhadra, S. (2023). Rag-pickers and Their Young Children During COVID-19: Exploring Issues in Parenting and Feasible Social Work Response. *Journal of Human Rights and Social Work*, *8*(1), 75–90. https://doi.org/10.1007/s41134-023-00239-2

Hartmann, C., Hegel, C., & Boampong, O. (2022). The Forgotten Essential Workers in the Circular Economy? Waste Picker Precarity and Resilience Amidst the COVID-19 Pandemic. *Local Environment*, *27*(10–11), 1272–1286. https://doi.org/10.1080/13549839.2022.2040464

International Alliance of Waste Pickers (n d, a). *International Waste Pickers Day 2024.* https://globalrec.org/2024/02/29/international-waste-pickers-day-2024/

International Alliance of Waste Pickers (n d, b). Mission. https://globalrec.org/mission/#:~:text=At%20the%201st%20World%20Conference%20of%20Waste%20Pickers%2C,support%20organizations%2C%20waste%20pickers%E2%80%99%20groups%2C%20and%20the%20public.

Khandelwal, P. (2021, October 15). Notices to Over 900 Bulk Waste Generators in Ghaziabad to Scale Down by 400MT. *Hindustan Times*. https://www.hindustantimes.com/cities/noida-news/notices-to-over-900-bulk-waste-generators-in-ghaziabad-to-scale-down-waste-by-400mt-101634230970653.html

Kjellstrom, T., Lemke, B., & Otto, M. (2017). Climate Conditions, Workplace Heat and Occupational Health in South-East Asia in the Context of Climate Change. *WHO South-East Asia Journal of Public Health*, *6*(2), 15–21. https://doi.org/10.4103/2224-3151.213786

Krishna, V., & Chaurasia, S. (2016). Assessment of Socio Economic Condition and Role of Rag Pickers in Municipal Solid Waste Management in Allahabad City (U.P.) India. *International Journal of Applied Research and Technology*, *1*(1), 13–20. https://isca.in/IJSS/Archive/v2/i2/2.ISCA-IRJSS-2012-03.pdf

Kumar, A., & Anand, S. (2017). Community Perception Towards Solid Waste Management in NCT of Delhi, India. *International Journal of Research & Review*, *4*(7), 47–55. https://www.ijrrjournal.com/IJRR_Vol.4_Issue.7_July2017/IJRR008.pdf

Kumar, G., Dash, P., Patnaik, J., & Pany, G. (2022). Socio-Economic Status Scale-modified Kuppuswamy Scale for the Year 2022. *International Journal of Community Dentistry*, *10*(1), 1–6. https://doi.org/10.56501/intjcommunitydent.v10i1.26

Kumari, S., & Kiran, U. (2021). Socio-Economic Challenges Faced by the Rag Pickers at Lucknow City. *IASSI Quarterly: Contributions to Indian Social Science*, *40*(2), 250–266. https://www.researchgate.net/publication/352881924_SocioEconomic_Challenges_faced_by_the_Rag_Pickers_at_Lucknow_City

Noda, S. (2022, March 05). Rag-pickers in India. *The Indian Express*. https://www.drishtiias.com/daily-updates/daily-news-editorials/rag-pickers-in-india

Pandey, A., Singh, S., & Kumar, S. (2023). A Community Based Cross-Sectional Study to Assess the Socio-Economic and Health Status of Rag Pickers in Varanasi Slums, North India. *Indian Journal of Preventive & Social Medicine*, *54*(1), 20–28. https://ijpsm.co.in/index.php/ijpsm/article/view/9

Ramitha, K. L. (2023). Solid Waste Workers in India and the COVID-19 Pandemic: A Review of Intersecting Challenges. *International Journal of Occupational Safety and Health*, *13*(1), 126–139. https://doi.org/10.3126/ijosh.v13i1.43113

Rani, U., & Pandey, B. W. (2019). Studying the Municipal Solid Waste Management System in Meerut City, Uttar Pradesh. *Journal of Global Resources*, *06*(01), 58–63. https://doi.org/10.46587/jgr.2019.v06i01.009

Rani, U., Pandey, B. W., Saluja, D., Anand, S., & Kumar, H. (2023). Assessing the Occupational and Environmental Health Hazards Among Rag-Pickers: A Systematic Review. *Research Article*, 1–40. https://doi.org/10.21203/rs.3.rs-2564708/v1

Samson, Melanie (2008). *Refusing to be Cast Aside: Waste Pickers Organizing Around the World*. Cambridge, Massachusetts: WIEGO.

Sarkodie, S. A., & Owusu, P. A. (2020). Impact of COVID-19 Pandemic on Waste Management. *Environment, Development and Sustainability*, *23*, 7951–7960. https://doi.org/https://doi.org/10.1007/s10668-020-00956-y

Singh, T., Sharma, S., & Nagesh, S. (2017). Socio-Economic Status Scales Updated for 2017. *International Journal of Research in Medical Sciences*, *5*(7), 3264-3267 https://doi.org/10.18203/2320-6012.ijrms20173029

United Nations (n.d.) Goals 8: Promote Sustained, Inclusive and Sustainable Economic Growth, Full and Productive Employment and Decent Work for all, Department of Economic and Social Affairs, Sustainable Development. https:// sdgs. un. org/ goals/ goal8

Wachukwu, C. K., Mbata, C. A., & Nyenke, C. U. (2010). The Health Profile and Impact Assessment of Waste Scavengers (Rag Pickers) in Port Harcourt, Nigeria. *Journal of Applied Sciences*, *10*(17), 1968–1972. https://doi.org/10.3923/jas.2010.1968.1972

Ethical Approval and Conflict of Interest

We prepared this manuscript following the ethical issues per the journal's guidelines. We

also declare that there is no conflict of interest in relation to the research, authorship, and publication of this study.

Author Contributions Statement

Alka Gagan designed the research paper, collected and processed the data, and wrote the original draft. Subhash Anand supervised the study, provided critical feedback on the study design and data interpretation, and contributed to manuscript writing. Usha Rani and Ashwani Kumar assisted in data collection and analysis and reviewed the literature. Anupama Dubey revised and edited the manuscript in light of reviewers' comments.

Informed Consent

The manuscript is part of the research work conducted at the University of Delhi. Hence, permission is not needed. However, the survey results can be found in the article itself.